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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/516,424

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EXAMINER

NGUYEN, LINH THI

ART UNIT

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2627

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/516,424	<b>Applicant(s)</b> KATO ET AL.	
	<b>Examiner</b> LINH T. NGUYEN	<b>Art Unit</b> 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-13 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12 is/are allowed.
- 6) ☒ Claim(s) 1,4-11, 13 and 16-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki (US Patent Number 6404713) in view of Ohno et al (US Patent Number 5130971).

In regards to claims 1, 13 and 19, Ueki discloses a method, apparatus and medium for recording data in an optical recording medium (Fig. 2) wherein data are recorded in a write-once type optical recording medium including at least one recording layer disposed on a substrate (Fig. 2, element 2 recording layer on a substrate element 1) by projecting a laser beam whose power is modulated in accordance with a pulse train pattern including at least pulses whose levels are set to levels corresponding to a recording power (Fig. 3) and a bottom power onto the at least one recording layer (Pb) and forming a recording mark in a predetermined region of the at least one recording layer (Fig. 3, input signal is recording mark), the method for recording data in an optical recording medium comprising a step of employing a pulse train pattern (Fig. 3) having

the smaller number of pulses whose level is set to a level corresponding to a recording power as a linear recording velocity becomes higher (Fig. 3, as linear velocity increase the waveform is WB so has less pulses and as decrease in linear velocity the recording waveform is WA with more pulses) and modulating the power of a laser beam thereby to form a recording mark in the predetermined region of the at least one recording layer (Column 10, lines 30-36 and lines 60-63), wherein the number of pulses is set to 1 in the case where data are to be recorded at a linear recording velocity equal to or higher than a first linear recording velocity  $V_H$  (Fig. 3, the waveform WB is set to 1 pulse as linear velocity increases). However, Ueki et al does not disclose the shortest mark (3T) to be set as one pulses.

In the same field of endeavor, Ohno et al discloses the shortest mark (3T) to be set as one pulses (Fig. 3). At the time of the invention it would have been obvious to a person of ordinary skill to modify the method, apparatus and medium for recording data in an optical medium of Ueki to have 1 pulse for the shortest mark as taught by Ohno et al. The motivation for doing so would have been to decrease the distortion of recording marks.

In regards to claims 4 and 16, Ueki discloses the method for recording data in an optical recording medium in accordance with claim 1, wherein in the case where data are to be recorded at a linear recording velocity  $V_M$  (velocity of 6 m/s) lower than the first linear recording velocity  $V_H$  (9 m/s) and higher than a second linear recording velocity  $V_L$  (3 m/s; Column 11 lines 30-33), and the number of pulses is set larger as

the length of a recording mark to be formed becomes longer (Fig. 3, with 8T the pulses is longer). Ueki does not but Ohno et al discloses the shortest mark (3T) to be set as one pulses (Fig. 3). The motivation is the same as claim 1 above.

In regards to claims 5 and 17, Ueki discloses the method and apparatus for recording data in an optical recording medium in accordance with claim 1 wherein in the case where data are to be recorded by forming recording marks having respective lengths at a linear recording velocity, the number of pulses is set so that a difference between itself and the number representing a length of a recording mark is constant (Fig. 3, the pulses is constant in the waveform WA and WB it is 1 pulse).

Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki in view of Ohno et al as in claim 1 above, and further in view of Hideya (JP Publication number 10106008).

In regards to claims 6 and 18, Ueki and Ohno et al discloses all that is claimed in claim 1. However, Ueki and Ohno et al does not disclose the method and apparatus for recording data in an optical recording medium wherein the first linear recording velocity is determined to be equal to or higher than 10 m/sec.

In the same field of endeavor, Hideya discloses the method and apparatus for recording data in an optical recording medium wherein the first linear recording velocity is determined to be equal to or higher than 10 m/sec (Fig. 5). At the time of the

invention it would have been obvious to a person of ordinary skill in the art to combine a method of recording data in an optical recording medium of Ueki and Ohno et al to have a linear velocity equal to or higher than 10 m/sec as suggested by Hideya. The motivation for doing so would have been to perform a recording mark at a high speed.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki in view of Ohno et al as claim 1 above, further in view of Sunagawa (US Patent number 6442119).

In regards to claims 7 and 8, Ueki and Ohno et al discloses everything claimed as applied above (see claim 1). However, Ueki and Ohno et al does not disclose a recording data in an optical recording medium, wherein the bottom power is set to a higher level as the linear recording velocity becomes higher.

In the same field of endeavor, Sunagawa discloses the bottom power is set to a higher level as the linear recording velocity becomes higher (Column 3, lines 60-67). At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the method of recording data in an optical recording medium of Ueki and Ohno et al to set the bottom power higher as velocity increase as suggested by Sunagawa. The motivation for doing so would have been to record at a high-speed with using high power laser beam.

Claims 9 and 10, are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki in view of Ohno et al as claim 1 above, and further in view of Nobukuni et al (Patent Number 6411579).

In regards to claim 9, Ueki and Ohno et al discloses everything claimed as applied above (see claim 1). However, Ueki and Ohno et al do not disclose a laser beam having a wavelength equal to or shorter than 450 nm.

In the same field of endeavor, Nobukuni et al discloses a laser beam having a wavelength equal to or shorter than 450nm (Column 5, lines 47-51). At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the method of recording data in an optical recording medium of Ueki and Ohno et al to have a laser beam wavelength of 450nm as taught by Nobukuni et al. The motivation for doing so would have been to record at a high-speed using a blue wavelength laser light on any optical recording medium.

In regards to claim 10, Ueki and Ohno et al do not but Nobukuni et al discloses the method for recording data in an optical recording medium, wherein data are recorded in the optical recording medium by employing an objective lens and a laser beam whose numerical aperture NA and wavelength  $\lambda$  satisfy  $\lambda/NA \leq 640$  nm, and projecting the laser beam onto the optical recording medium via the objective lens (Column 5, lines 47-51; wavelength of  $400/.65=615$ nm, which is less than 640nm). At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the method of recording data in an optical

recording medium of Ueki to have a laser beam with a numerical aperture and wavelength of less than 640nm as taught by Nobukuni et al. The motivation is the same as claim 9 above.

Claims 11 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueki in view of Ohno et al as applied to claim 1 above, and further in view of Takashi et al (JP Publication Number 2001101709).

In regards of claims 11 and 20, Ueki and Ohno et al do not but Takashi et al discloses the method and medium for recording data in an optical recording medium, wherein the optical recording medium further comprises a light transmission layer (Fig. 3, element 11B), and a first recording layer (Fig. 3, element 111) and a second recording layer (Fig. 3, element 112) formed between the substrate (Fig. 3, elements 101 and 102) and the light transmission layer, and is constituted so that the at least two recording marks are formed by projecting the laser beam thereunto (Fig. 3), thereby mixing an element contained in the first recording layer as a primary component and an element contained in the second recording layer as a primary component (Paragraph [0040]). At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the method of Ueki and Ohno et al to contain a substrate and 2 recording layers as suggested by Takashi et al. The motivation for doing so would have been to offer a storage medium that is reliable under high-speed type recording.



In regards to claim 21, Ueki and Ohno et al do not but Takashi et al discloses the write-once type optical recording medium, wherein the second recording layer is formed so as to be in contact with the first recording layer (Fig. 3). The motivation is the same as claim 20 above.

In regards to claim 22, Ueki and Ohno et al do not but Takashi et al discloses the write-once type optical recording medium, wherein the light transmission layer is formed so as to have a thickness of 10 nm to 300 nm (Paragraph [0021]). The motivation is same as claim 20 above.

### ***Response to Arguments***

Applicant's arguments, see page 2, filed 4/10/08, with respect to the rejection(s) of claim(s) 1-22 under Ueki have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ueki in view of Ohno et al.

### ***Allowable Subject Matter***

Claim 12 is allowed.

The following is a statement of reasons for the indication of allowable subject matter:

In regards to claim 12, none of the references alone or in combination discloses a step of employing a pulse train pattern having a larger number of pulses whose level

Art Unit: 2627

is set to a level corresponding to a recording power as a ratio of a track pitch TP of the optical recording medium to diameter of a spot.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Miyamoto and Saga discloses an apparatus and method able to record/reproduce by a laser beam power modulated into at least a recording and reading power.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LINH T. NGUYEN whose telephone number is (571)272-5513. The examiner can normally be reached on 10:00am-7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN

August 3, 2008

/Wayne Young/

Supervisory Patent Examiner, Art Unit 2627